HANDBOOK

FOR

COUNSELLORS

Vol. II

INDIAN RED CROSS SOCIETY
JUNIOR RED CROSS SECTION

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CONTENTS

		Page
1.	Foreword	1
2.	The Counsellor and School Medical Inspection ...	2
3.	What the Counsellor should know about Tuberculosis	4
4.	What the Counsellor should know about Malaria ...	8
5.	What the Counsellor should know about Small-Pox	11
6.	What the Counsellor should know about Cholera ...	14
7.	What the Counsellor should know about Nutrition...	17
8.	What the Counsellor should know about Ears, Tonsils and Adenoids	20
9.	What the Counsellor should know about Eyes ...	26
10.	What the Counsellor should know about Dental Hygiene	28
11.	The School Building and Compound ...	34
12.	Closets and Toilets	37
13.	Ventilation in the School Buildings ...	40
14.	Recreational Activities—Games and Hobbies ...	43
15.	Appendix I : Report on School Medical Inspection	48

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PREFACE

The present volume was first published in 1939 with the idea of placing in the hands of Counsellors a booklet which will give them up-to-date knowledge on various phases of health, which are so essential in inculcating practice of fundamentals of hygiene among members of Junior Red Cross groups. The onerous duties of Counsellors cannot be discharged to their satisfaction unless they have acquainted themselves with full facts on which the structure of a healthy body and mind so much depends.

The booklet is a compilation of articles from different eminent authorities and we take this opportunity of expressing our grateful thanks to those who have contributed the articles.

We are also indebted to the Canadian Red Cross Society in allowing us to reproduce a few of the articles from their book entitled "School Health."

We are glad to bring out this seventh edition and hope that it will prove as helpful as the previous issues,

New Delhi :
August, 1966.

COMMUNITY HEALTH CELL
Chennai
600 017
EXTENSION UNIT

FOREWORD

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THE ROLE OF THE COUNSELLOR IN THE JUNIOR RED CROSS MOVEMENT

The programme of the Red Cross organisation in peace time is summed up in the following three phrases :—

The improvement of health
The prevention of disease
The mitigation of suffering.

The Junior Red Cross is the children's branch of the Red Cross in which the whole school is registered as a group and may form a number of sub-groups for different kinds of activities. The aims of the Junior Red Cross are :—

Promotion of health, specially the practice of health habits.

Service to the sick and suffering, specially children.

International friendliness, promoted through the exchange of correspondence albums between groups.

These activities are carried out under the guidance of a teacher who is known by the internationally recognised designation of "counsellor", that is one who gives counsel or advice, Practice is better than precept and a counsel will have its effect if the counsellor is himself acting up to it. A teacher by his example makes a deep mark on the impressionable mind of his pupil and becomes his ideal of life. The teacher thus imperceptibly moulds the future generation. If he does not trim his nails he himself would not feel interested in the inspection of his pupils' nails and much less would they realise the importance of cutting their nails short and keeping them clean. The dirt under the nails would pass unchecked in and out of their mouth with each morsel of food that they take with their hands. You cannot expect your pupils to wear clean clothes if your own clothes are dirty nor can you expect them to keep an erect posture if you yourself are loosely huddled up in your seat. If you yourself do deep breathing then your instruction for deep breathing and breathing through the nose would be better followed. Your placards of "DO NOT SPIT" would be scarcely understood if you at the same time provided spittoons on verandahs—a bad object lesson—and would be entirely disregarded if you yourself do not mind spitting. Formation of these health habits is the most important programme of the Junior Red Cross.

The subject of health and hygiene is in the curriculum and there are sometimes books recommended for teaching the subject and yet the teacher wonders why it does not form an important part of class examination. The reason is that this subject on the whole cannot be taught didactically, and strange as it may appear it is a limited one in some respects and comprehensive in others. It is in short a personal matter. The item of "Service to the sick and suffering" admits of considerable speculation, but it can be given a definite form by imparting a training in the prescribed courses of First Aid to the Injured and Home Nursing for which qualification certificates are issued by the St. John Ambulance Association (India). Practice of health habits, home nursing, first aid to the injured and knowledge of common epidemic diseases, their causation, spread and prevention, with a knowledge of "first aid in epidemics," cover the ground admirably and provide a teacher with useful material for teaching health and hygiene. The value of the Junior Red Cross as an element in the establishment of friendly relations between nations all the world over has also been established. And these are all on the programme of the Junior Red Cross. The monotony of the subject, if it at all tends to drift, can be broken with embellishments which any intelligent teacher, having the welfare of his pupils at heart can readily introduce. It is for the benefit of the teacher that this Guide has been prepared and it is hopped that he or she, while keeping the essentials in view, would be able to add variety to the programme and make the subject of Hygience and Health interesting and useful. The motto of the Junior Red Cross is "I serve"—service to oneself and others and there can be no better service than that which is conducive to better health.

THE COUNSELLOR AND SCHOOL MEDICAL INSPECTION

In some States School Medical Inspection is a regular procedure carried out every six months or so by a School Medical Officer. The appointment of such School Medical Officers has fulfilled a long-felt necessity and has helped considerably in improving the health of school children. It has by no means relieved parents and Junior Red Cross Counsellors of their responsibility of looking after the health of Juniors but on the contrary has placed definite obligations upon them. No sooner a physical defect has been pointed out in a Junior it is the duty of his parents and an obligation upon the Counsellor to see that it is remedied. The Counsellor particularly can play an important role in this respect.

We know from our experience that Counsellor is even more influential than Junior's parent. A child attends a school to learn and to imbibe the advice he is given. His highest aim is to act up to his Counsellor's advice and to copy him. A Counsellor, therefore, can bring out more physical and mental improvement by taking an active interest in the health of his Juniors than a parent or a doctor can do.

A doctor examines a patient for a few minutes in which he makes his diagnosis, while a Counsellor has the opportunity of studying for long periods which enables him to make a closer study of physical, mental and psychological conditions of his Juniors. The Counsellor can give more correct information to the doctor regarding his Juniors than parents can do. He can inform the doctor whether a Junior is active or dull, whether he takes interest in his surroundings or is indifferent to the outside world, whether he plays any game or prefers to sit quietly in a corner and also whether he is losing or gaining in weight.

Guarding the sight of school children is another subject in which Counsellors can be of indispensable help. About 70% causes of blindness occur before 20 years of age and practically all cases of myopia develop during school life. When we know that over 70% are blind from preventable causes, the effective guarding of the vision of school children will not only prevent most of the blindness of old age but will also prevent a great mass of visual and nervous disabilities and chronic ill-health. Almost the whole of the educational system is based on the use of eyes and therefore every effort should be made to secure the use of eyes in the safest, least injurious way and under the most favourable conditions.

The duty of a School Medical Officer is to examine and prescribe treatment for a Junior, carrying out of the treatment and follow-up is the duty of those who are interested in his health. It is here that a Counsellor can be of great help. He can give much more accurate information about the progress of a particular Junior and can be of assistance to a doctor.

In States where no School Medical Officers are available and particularly in tehsils and villages where services of a qualified doctor cannot be requisitioned, the Counsellor can play a very important part in looking after and improving the health of his Juniors. It is rather essential that Counsellors should have first hand knowledge of elementary principles of health before they can be expected to be of service towards this end. To achieve this object a School Medical Inspection Report has been drawn up which is given in appendix I. To correctly fill this report will require a little study of the instructions given therewith.

It is not intended that Counsellors should take over the duties of a doctor by completing that report and go to the extent of suggesting some medicines for the defects they may observe, which is strictly the duty of a doctor and must be left to him. The intention is that it will acquaint a Counsellor whether a certain Junior is normal or abnormal in health and needs the immediate attention of a doctor.

The greatest ambition of a Counsellor is to see his Junior come out suceessful in examinations with fiying colours. This can-

not be achieved unless Juniors possess healthy minds, and a healthy mind is impossible without a healthy body. A healthy body can only be maintained by observing simple laws of health and attending to any physical defect that may be present at an early age before it has had time to leave a permrnent mark on the body.

WHAT THE COUNSELLOR SHOULD KNOW ABOUT TUBERCULOSIS

No one wants any disease and of course no one could possibly be found who wants to get tuberculosis, and still, hundreds of thousands of people contract this disease and die of it out of sheer ignorance. This is a disease which kills one out of every seven persons born on this earth, and is responsible for about half to one million deaths every year in this country. It exists in all classes of people who desired the laws of health. Unlike most infectious diseases which only visit us periodically, tuberculosis is present all the year round and nearly in all places, more so in the towns than in the villages, and is responsible to a great extent for the sickness, suffering, crippling and the economic waste that we see around us. It is a disease which attacks children, and kills people mostly in the prime of their lives, between 15—30 years, and in this age period three times as many women die of this disease, as men.

The Cause Of Tuberculosis

1. A germ.

2. A weak body in which the germ is able to grow. The disease is not inherited, the germ is the sole cause, which may attack any part of the body. It commonly attacks the lungs causing consumption (*"Tapediq"*). It is usually responsible for the enlarged glands in the neck and abdomen, painful and suppurating bone and joint conditions in the young children.

Where The Germ Comes From ?

This germ cannot live on vegetable. Fresh air and sunshine readily kill it, but it can live for months in damp, dark and badly ventilated places. It commenly attacks human beings, and sometimes animals, especially the cow, and lives and thrives in their bodies. The chief sources of the germ are :—

1. The sputum (spit, phlegm) of consumptive patients or pus from tuberculous suppurating wounds.

2. The spray produced when a consumptive coughs or sneezes.

3. Milk of consumptive cows, (fortunately, not very many cows in our country suffer from this disease, and moreover the milk is usually boiled and consequently made safe).

How The Germs Are Scattered

1. By coughing with uncovered mouths.
2. By boots, shoes, and skirts, through sputum adhering to them.
3. By young infants crawling on the floors where people spit.
4. By dusty air especially indoor, *e.g.*, by careless sweeping.
5. By common drinking cups or common *hookah* smoking.
6. By cleansing utensils with earth contaminated with sputum.
7. By soiled handkerchiefs.
8. By flies.

How The Germs Gain Enterance Into The Bocy ?

1. By inhaling the spray of sputum when a consumptive coughs or sneezes.
2. By dried expectoration which is inhaled as dust.
3. In food and drink infected by flies and dust or unboiled or unpasteurised milk from infected cows.
4. Through infected hands and articles placed in the mouth, such as sucking pencils, pins, coins or kissing a consumptive on the mouth.

Factors Which Weaken The Body And Enable The Germ To Gain Foothold

1. Living in badly venti.ated and overcrowded places.
2. Insanitary conditions (dirt and squalor) including defective school hygiene.
3. Inhaling irritating fumes.
4. Unwholesome and insufficient food.
5. Sleeping with covered faces.
6. Decayed teeth.
7. Weakening diseases.
8. Bad posture.
9. Over fatigue.
10. Early marriage.
11. Over indulgence in food, drink and venery.

Tuberculosis—A Preventible Disease

Tuberculosis is a preventible disease and can be easily prevented provided a clean and hygienic mode of living is adopted, and free and constant use is made of those elements in nature (fresh air and sunshine), which form the very basis of health and absence of all diseases.

How to Avoid Contracting This disease ?

1. Live, work, and sleep in pure fresh air.
2. Keep the doors and windows open by day and night,
3. Do not sleep with covered faces.
4. Breathe through the nose.
5. Take reasonable exercise in the open.
6. Adopt good posture—head up, chin in and do not stoop.
7. Take plenty of milk, fresh fruits and green vegetables.
8. Wash your hands before meals.
9. Do not put fingers and pencils in your mouth—they may be infected.
10. Do not allow flies access to food and drink.
11. Do not sleep in the same room as a consumptive.
2. Be temperate.

Tuberculosis is not a highly infectious disease like smallpox or cholera. It is not contracted by a casual contact with a consumptive person. *To treat a consumptive person as a leper if that person is taking precautions is unjustifible cruelty because such a person is not dangerous to live with.*

A consumptive is not dangerous to live with if the observes the following precautions :—

1. He should not spit anywhere except in a vessel (flask) containing some disinfectant.
2. He should not cough in the direction of any other person or on food.
3. He should not kiss anybody especially a child.
4. He should not sleep in the same room as a child.
5. He should use separate utensils.
6. He should not allow the room he occupies to be dry cleaned or dusted.
7. He should have his bedding put in the sun frequently.
8. He should keep his room thoroughly ventilated night and day.

It will be seen that this disease can be easily prevented if all the healthy persons and consumptive patients co-operate in this common endeavour, and play their parts intelligently and conscientiously. The disease is not only preventible but curable in most cases, if treated early. It may be arrested even in advanced stages but every delay in eom mencing treatment is dangerous not only for the patient but for his friends and relations as well. It is essential that one should know the danger signals of this disease, which usually has a slow and insidious onset. The following may point out the commencement of consumption :—

1. Cough, however, slight, if presistent and especially the morning cough.
2. Spitting of blood.
3. Loss of flesh.
4. Loss of energy—being easily tired or feeling run down.
5. Rise of temperature, especially a low rise over long periods.
6. Anaemia or bloodlessness.
7. Pain in the chest.
8. Enlarged glands in the neck.

If any of these signs is present it is better to consult a doctor at once. Delay is dangerous. To be perfectly safe have a medical examination once a year.

Some Suggestions on School Participation In Tuberculosis Prevention And Control

All schools may not be ideally situated to take up all the activities but there is a lot in each of the following heads which can be easily taken up by all schools :—

1. *School Hygiene* :—The school and its surroundings should be kept scrupulously clean and all dirt and dust energetically swept. The class rooms, should be well-ventilated, doors, windows and skylight should be always kept open. There should be facilities for outdoor activities and children should be kept in the open air and sunshine as long as possible. Fresh air camps should be organised.

A pure water supply and facilities for washing hands especially before meals are a great asset for good health. School luncheons should be organised. "DRINK PLENTY OF MILK AND EAT FRESH FRUITS AND VEGETABLES," should be a slogan in each school.

2. *Personal Hygiene* :—Each child should live a clean hygienic life, "SIT ERECT AND BREATHE THROUGH THE NOSE." should be the rule for each child. Ample rest and sleep (8 to 9

hours) is as important an item of the health game as probably all the rest put together.

LEARN TO BE HEALTHY AND TEACH OTHERS TO BE HEALTHY

3. *School Medical Inspection.*—Annual health examination of each child and every school employee should be the rule. A teacher or an employee with active tuberculosis is a danger to children.

Daily observation of children in a class room and records of weight, all help the teacher to know whether the child is making good health progress or not. *Immediate constructive* action should be taken in case a child is found living in close contact with a tuberculous patient, both in the interest of the child's own safety and of safety of the entire school.

4. *Public Health Measures.*—The school should support all approved and generally accepted public health measures. Such activities include periodic examinations of children, and especially these measures for the diagnosis of tuberculosis and counselling teachers and parents to take proper steps to follow up the findings of tests and examinations carried out. The wholehearted support of school in all such measures will make possible a more complete anti-tuberculosis programme for all children in the area.

5. *Join and Help all Health Movements.*—The child should be encouraged to develop a correct attitude towards all health movements. All measures having anything to do with health should be made significant and meaningful and participation of children in these should be encouraged.

WHAT THE COUNSELLOR SHOULD KNOW ABOUT MALARIA

It is not only India that suffers from the scourge of malaria, the disease has a much wider sphere of activity and is prevalent in tropical and subtropical regions of the globe. It is rife in Iraq, Indo-China, Burma, Ceylon and tropical regions of Africa. The west coast of Africa is the worst in this respect.

The disease is prevalent throughout India, but some parts are more malarious than others. The incidence is higher in lower Bengal and Assam. Madras is comparatively less malarious.

Seasonal Variations.—The disease is prevalent during the latter part of the year from July to December, reaching its climax in October or November. Moist air and hot climate help to propagate the disease. Low lying plains, marshes, and towns situated on the banks of rivers, canals and lakes are other favourite sites of the disease.

It is rarely known to occur in hills above 5,000 feet high.

Incidence.—It is estimated that the disease is responsible for about 1,000,000 deaths in normal years. During epidemics the toll of death is increased by another 500,000.

Apart from direct mortality due to malaria it acts indirectly by lowering the resistance of its victims and making them prone to suffer from other diseases to which they succumb at a later date. There appears little doubt therefore that malaria by its combined direct and indirect actions is responsible for at least 2,000,000 deaths each year). It is calculated that at least 100,000,000 individuals suffer from malaria in India alone. Its victims are chiefly children and the aged.

Mode of infection and species of mosquitoes.—The disease is conveyed by mosquitoes. There are several species of mosquitoes. The ones we are concerned with here are *culicine*, *anapheline* and *stegomyia fasciata* which are prevalent in India.

Stegomyia fasciata is easily distinguished from the other two species by the alternating white and black bands on its body. The distinction between anopheline and culicine adult mosquitoes is also fairly simple. An anopheline mosquito while resting has its body at an angle to the surface of the wall. a culicine is hump-backed and its body is parallel to the wall. The wings of anopheline mosquito are spotted, that of culicine are not. There is still another distinguishing point and that is that culicine mosquito while hovering over the individual makes a humming noise. An anopheline settles quietly on the body of its victim and transmits the disease before the victim realises that it has been bitten by a mosquito.

Life Cycle of a mosquito.—The female anopheline mosquito lives on human blood and transmits the disease. It lays about 100-200 eggs at a time, on the surface of the water. These eggs when laid, float on the surface of the water and form into long chains or star shapes. To the naked eye these appear as minute black dots, resembling hair, left floating on the surface of water after a morning shave. Those of culicine are greyish in colour and owing to the sticky material around them get adhered to one another and form boat shapes or rafts.

In 2-3 days depending upon the temperature of the water and the climate the larva emerges from the egg. It darts about rapidly in water. It breathes through a syphon and lies at an angle to the surface of water while breathing. The anopheline larva on the other hand lies flat on the surface on the water and has no syphon.

Within 7-10 days these larvae form into pupae. A pupae is a comma shaped insect and darts in water with a jerky movement. In 24-48 hours, it straightens itself and lies on the surface of water. In a few hours the case splits and an adult mosquito hatches out.

Asexual and sexual cycles.—It has been mentioned previously that female anopheline mosquito conveys the disease from one individual to another. The disease before it is transmitted passes through two different phases of life cycles—one in the human being known as Asexual life cycle and the other in the mosquito known as Sexual life cycle.

An infected female anopheline mosquito while biting an individual injects a few parasites known as sporozoites into the blood. The parasites swim to the nearest red blood cells and enter into them. Here they begin to grow and pass through several stages of development. When mature they burst the red blood cells in which they were contained and swim to the nearest red blood cells and enter them. The life cycle thus starts again. Some of these young forms instead of developing into mature forms develop into sexual forms.

When an anopheline mosquito bites an infected person, sucks a few sexual forms of the parasites along with the blood. The parasites unite in the stomach of the mosquito and then penetrate the stomach wall of its host and come to lie on its surface and assume globular shape. Here the parasite develops into adult form and forms mature cysts. A mature cyst is full of adult parasites known as sporozoites. These sporozoites circulate into the system of the mosquito and come to lie in its salivary glands. When this infected mosquito bites a person it injects a few parasites into the blood and thus a sexual cycle starts again.

Antimalaria measures.—We know that mosquitoes breed in stagnant waters. Ponds, pools, ditches, blocked up drains and other collections of water are favourite sites for their breeding. Their larvae can be destroyed by pouring a few drops of oil mixture on the surface of water. The mixture forms a layer of oil on the surface, chokes breathing tubes of larvae and kills by suffocating them within a few hours. The oil mixtnre can be prepared by mixing equal parts of kerosine and crude oil. A very good substitute is used—crank oil from lorries and cars. Spraying the room with kerosine oil and other germicidal preparations also destroy mosquitoes but the effect only lasts a couple of hours.

Drugs containing citronella oil, eucalyptus oil and other essential oils when anointed over the body prevent mosquitoes from biting an individual. The effect of these also lasts for 2-3 hours.

The best, most economical and the easiest method is the use of a mosquito net. Its use eliminates 90% chances of getting the disease.

If, however, a person is suffering from malaria, there is one and only one way out of it and that is to have a thorough treatment. The habit of some to give up taking quinine soon after the fever has subsided only results in getting relapses, becoming a carrier of the disease and a constant source of danger to others.

WHAT THE COUNSELLOR SHOULD KNOW ABOUT SMALL-POX

Small-pox is one of the most dreadful and highly contagious disease known to mankind since time immemorial. In India it has been mentioned in Atharvaveda which lays down the temple service for small-pox as also the prayers for use by Brahmins when practising inoculation. There is no other disease that has been more feared by the people in every land than the small-pox, for it has not only claimed its victims so oftener and in such large numbers but those who are affiicated and have escaped death are almost sure to be disfigured with pock-marks in the face or to be blind in one or both eyes. When it is prevalent in an epidemic form hardly one or two out of every one hundred unvaccinated persons escape the disease. (And it was so much common in the pre-vaccination days that a German author rightly said :—"From small-pox and love few people can remain free").

The Cause Of Small-Pox

Physicians are agreed that small-pox is caused by certain micro-organism but the specific germ has not yet been discovered. (Several investigators have published results claiming to have isolated the specific germ but this casual role has, however, so far been not yet established). The poison of small-pox is present in the discharges from nose, mouth and throat of a small-pox patient and the dry crusts and scales that fall from the skin when he is recovering. All these are very infectious. The poison is conveyed through the air to a considerable distance (half a mile). The disease attacks young and old, male and female, but the children are more prone to it.

How It Is Conveyed

Small-pox arises from a contagion of a previous case. The contagion reaches a healthy person by breathing in the atmosphere surrounding an infected person. The contagion also clings to the clothing, bedding, furniture and other things which have come in contact with a patient and is conveyed to others by means of these infected articles. When the infected clothings are sent to a "dhobi" and somehow come in contact with already washed clothes, the contagion is likely to be conveyed through these to the persons using them. This explains the occurrence of cases in localities situated at considerable distances from the origin of a case. Contagion is probably more often conveyed by contact with a person actually suffering from the disease.

The belief of some people that it originates from unclean, overcrowded houses and insanitary surroundings is erroneous. It may, however, be intensified by such conditions as is the case with most of the infectious diseases.

Signs And Symptoms

The disease appears about 12 days after the poison has entered the body of a person. It mostly begins with a chill with a severe pain in the back, headache and vomiting. There is fever, and the temperature rises rapidly from 102 degree F, to 104 degree F. On the third day of the fever the typical eruption of small-pox appears. The eruption is like dark red hard pimples known as papules which as a rule appear first on the forehead, on the front surfaces of the wrist and then all over the body. In one or two days these papules become enlarged and filled (vesicles) and in another day or two the fluid changes into pus pastules. In the more severe cases the eruptions are very abundant and general illness correspondingly severe. In one of the types of the disease called confluent small-pox. the pustules are very closely set, meet together and form irregular blebs. In another type called haemorrhagic small-pox which is invariably fatal there are blood patches due to bleeding in the skin.

The disease is often confused with chicken pox and measles. It should be remembered that in chicken pox, the rash appears on the first day of fever and one portion of the skin shows several stages of the erupiton. In measles there are signs of catarrh (inflammation) and redness and the running from the eyes. The rash appears on the fourth day of the fever.

Treatment

A doctor should be consulted. There is no specific treatment to cut short the disease. Nursing is very important. The patient should be put to bed in a ventilated room. Plenty of cool boiled water should be given to drink. If the fever is high sponge the body with cold water. If there is lot of itching apply constantly on the face and hands lint soaked in cold water containing 2% of carbolic acid. Prevent the child from scratching the vesicles or pustules. Great care should be taken of the eyes which should be frequently washed with a piece of lint soaked in a saturated solution of boric acid (a large spoonful of boric acid to half a glassful of boiled water). After cleaning the eyes apply a little vaseline to the edge of the lids. When the pustules begin to dry and form crusts, paint vaseline over the body. The patient should be given abundant milk and easily digestive food and cooling drink to quench his thirst.

Precautions Against Small-Pox

The prevention of small-pox summed up in one word is vaccination. Even from the earliest time people know that an attack of small-pox protected an individual against a subsequent attack. This natural method of protection was employed in the olden days as far back as the vedic period in form of inoculation as practised by a

particular tribe of Brahmins in India. The process consisted of infecting a minute wound with material taken from a small-pox sore. A mild form of small-pox developed in the person thus inoculated. This method although it afforded good protection to the individul was fraught with many disadvantages and dangers. One great disadvantage was that the inoculated person who developed a mild form of the disease was a source of a great danger to those who were not inoculated in the vicinity and thus epidemics of small-pox became frequent. Then there was risk of transmission of other diseases to a healthy person with the virus taken from a patient who might be suffering from venereal or other diseases. For these reasons the practice of inoculation was forbidden in other countries after the discovery of vaccination.

The credit of discovery of vaccination goes to an English physician, Edward Jenner of Gloucestershire. While he was working under John Hunter he heard a young country woman saying, "I cannot take that disease for I have had cow-pox." This set Jenner to thinking and experimenting, ultimately resulting in the discovery of vaccination, the method of prevention of small-pox used in all the countries at the present time.

The germ that produces small-pox in man also produces similar disease in the cow called cow-pox. The lymph taken from cow-pox when injected in the body results in a vaccination eruption at the site of vaccination accompanied by some fever. Thus the man so vaccinated is protected for larger or shorter period even if he slept in the same bed with a person who had small-pox.

The disease has been stamped out in those countries where a law has been established making vaccination and revaccination compulsory. Primary vaccination of the children should be done by the time the child is six months old and revaccination after every three years. It should be remembered that whenever there is an epidemic of small-pox in the locality one should always get himself vaccinated or revaccinated as the case may be. Other measures which should be adopted on the occurrence of a case are (1) notification immediately to the health authorities, (2) isolation of the patient to the isolation hospital or in a separate room in the house, (3) disinfection of the room and the patient's clothings.

COUNSELLORS' AND JUNIORS' PART IN PREVETION AND CONTROL OF SMALL-POX

The Counsellors of a Junior Red Cross group can help in the prevention of the disease in the following ways :—

(1) Educating the Juniors in the cause of spread and method of prevention of small-pox.

(2) He can use his infiuence in getting all such chil vaccinated who are not protected against small-pox (either by a g vaccination mark or pock-marks). It is not infrequently the that when a vaccinator visits a school the children are frightened try to run away. The Counsellors should exercise tact and can the sympathies of such children by producing before them, two one badly pitted with pock marks and disfigured in the face without any vaccination marks on the arm, the other with a c face with good vaccination marks on the arm and asking them a which of the two boys they would like to be. Invariably the fi points towards the vaccinated child. Then suggest vaccination there would be no difficulty.

(3) Notifying to the health authorities immediately sh a boy reading in the school is down with small-pox.

(4) Helping the vaccinator to get all scholars vaccin or revaccinated in case of small-pox occurring in the villag town.

The members of the Jounior Red Cross can also play important part in the prevention of the disease by notifying case small-pox occurring in their localities to the counsellor and by d propaganda in the villages by means of health songs and dialogue remove prejudices against vaccination.

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WHAT THE COUNSELLOR SHOULD KNOW ABOUT CHOLERA

Asiatic cholera, as its name implies, is a disease w originated and has been prevalent in Asia. In India it has known from time immemorial. It has ravaged all India from tim time and had occasionally penetrated into Europe. During epide it has taken a toll of lakhs of lives and has lingered for several y It has closely associated itself with the movements of pilgrims has raged at places visited by them. The epidemics gene appear during the spring months but are by no means confine that time of the year. Overcrowded places, insanitary towns, villages with unprotected water supply are the favourite sites.

Case.--It is due to a small organism called comma bacillus owing to its shape resembling a comma. It is found in the vomit, stools and urine of the persons suffering from the disease. It is also found in the excreta of those who are known as carriers. Carriers are persons who may or may not have suffered from the disease but harbour the organisms in their gall bladder and intestine and excrete them in large numbers when suffering from looseness of bowels.

Mode of spread.—The most common cause of spread of the disease is contaminated food and drink. Rivers, wells or ponds get polluted as a result of an infected person cleaning himself in them or by washing infected clothes. A water supply once polluted is enough to start an epidemic. Milk can be infected by contaminated vessels or infected hands and similar food. Green vegetables and fruits get contaminated by throwing excreta of cholera patients into the fields or by washing them in polluted water. Food left uncovered can get contaminated by flies.

Another cause of spread of disease is by direct contact with the patient, Persons attending such patients are liable to suffer themselves or can convey it to others through infected hands. Carriers are also a constant source of danger.

The common house-fly plays an important role in the spread of the disease. Owing to its habit of sitting on human excreta it carries cholera organisms on its body and infects food and drink.

Signs and symptoms.—The symptoms generally commence within a few hours to two days after infection. The onset is sudden but sometimes it is preceded by looseness of bowels and indigestion. The patient first complains of frequency of stools which at first contain faecal matter but soon become waterly like rice-water. Indigestion with pain in the abdomen and vomiting is accompanied with it. The vomited matter in the beginning contains indigested food and later on becomes watery. Frequency of stools and vomiting is so marked that the patient soon becomes collapsed both as a result of strain and depletion of water from the system. Temperature becomes subnormal, pulse is hardly palpable, skin is cold, eyes are sunken and the patient in a state of marked collapse. Thirst is marked and the urine is suppressed. If the treatment is not carried out very early it usually results in death.

Prevention.—When a case of cholera has occurred in your town or village the following rules should be observed for your personal protection.

1. Keep your digestion in order. Don't overfeed or underfeed yourself. Attend to diarrhoea at once if you happen to suffer from it.

2. Avoid purgatives during epidemics.

3. Avoid foods that cause indigestion. Don't eat over ripe raw vegetables or fruits.

4. Only take boiled drinks. Even freshly prepared aera waters may be infected.

5. Avoid food and drinks when travelling through a chol affected area.

6. Always wash your hands with potassium permangan lotion before taking your meal.

7. All food should be freshly cooked and eaten while is warm. Don's let flies get access to it.

8. Get yourself inoculated against cholera.

9. Use chlorinated or pot. permanganate lotion for washi your utensils during cholera epidemic.

10. If you call on a cholera patient don't touch any of things, wash your hands with soap and water and dip them i disinfecting lotion for a minute or two.

One tola of permanganate of potash throughly dissolved kerosene tin full of water is a good disinfecting lotion.

11. The excreta of the patient should be passed into disinfecting lotion and covered at once and either be burned buried deep into the ground far away from any well. river or tank.

12. The soiled clothes or bedding should either be burned well boiled and dried in the sun before being used again.

The Counsellor and Junior's role in an outbreak of Cholera

The Counsellor and Juniors can render great social service in outbreak of cholera and can be of great assistance to Public Heal Authorities by carrying out some of the measures adopted to contr such an epidemic.

1. No sooner a case of cholera has come to the knowledge a Counsellor or Junior then the *Public Health Authorities should informed at once.*

2. Wide publicity regarding an outbreak of cholera should b given. Leaflets on preventive measures should be freely distributed.

3. Lectures on cholera should be arranged.

4. The public should be encouraged to get inoculated again it by setting their own examples.

5. All sources of water supply should be protected. All wel should be permanganated. Guards should be placed over tank ponds, etc., to prevent people using them at least for a week After the sun has had the disinfecting effect, they can be used unde strict supervision.

6. Attention should be paid towards cleanliness of the town or village. Conservancy arrangements should be strictly supervised and all places where flies are likely to breed must be cleared.

7. All privies and drains should be kept clean and disinfecting lotion creosote or phenyl be poured in them.

8. All human excreta must be burned or buried deep into the ground away from any source of water supply.

9. All shops selling eatables should be strictly supervised and nothing be allowed to be kept exposed to dust and flies.

10. Cholera infected houses should be thoroughly disinfected. Floors should be washed with strong solution of chlorinated lime (1 in 32) and the walls white washed.

WHAT THE COUNSELLOR SHOULD KNOW ABOUT NUTRITION

It is a subject which is not receiving the amount of attention it should. People do realise its importance but have allowed it to lapse into oblivion because of the impression that attention towards this subject means extra expenditure on their dietary budget which in the present state of economic depression they can ill afford. It is anything but true and if they only realised how much improvement can be brought about by balancing the diet and consequently improve their health by incurring a little extra expenditure, they would not feel half as reluctant as they do now.

There is another point in this connection which also demands consideration and that is "A" person may fill himself with food and so feel satisfied, yet he may be undernourished." This is not a truism but strikes at the root of malnutrition, a malicious influence that attacks so widely those qualities of bodily and mental health, so necessary to ordered progress, peace and contentment.

The human body is a much more intricate mechanism than a car and for its proper development and continued growth, it not only requires that the diet must be adequate but also that it must contain in the right proportions the various food stuffs needed to keep it in perfect trim.

What Our Food Should Contain

Our food should contain the following articles of diet :—

(1) *Body building.*—Protein is an essential material for this purpose. Eggs, meat, fish, milk, cheese and pulses are rich in protein. The cereals also contain protein in fair abundance.

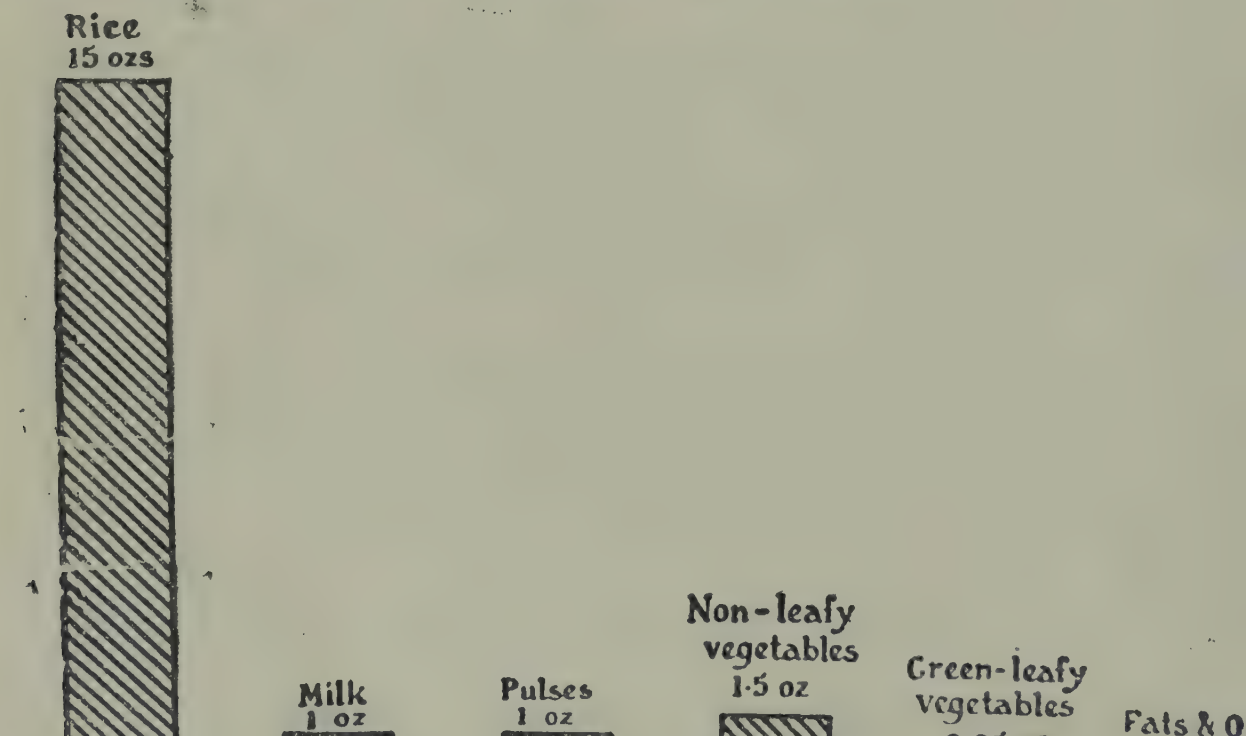
(2) *Energy-supplying.*—Carbohydrates and fats supply en and produce heat to maintain the temperature of the body. B cereals, potatoes, pulses, sugars and vegetable oils may be rega as "energy supplying" foods.

(3) *Body protectors.*—Vitamins and salts protect and mai the physiological functions of the body in a healthy state. Fr vegetables and dairy products are good source of these esse elements.

Let us examine these various dietary essentials in more deta

Proteins.—As protein is used for growth and repair of body tissue, growing children need it in large quantities. M fish, eggs, milk, cheese and pulses are rich in protein. Cereals as rice, wheat, millet, barley. etc., also contain a fair proportio it. It is the outer layers of these that are richest in protein as in other food factors such as vitamins and mineral salts than inner starchy kernel. When rice and wheat are milled, the value is to certain extent lost. We should therefore use unm ice, and eat whole-meal bread rather than bread made from w highly milled flour. Protein derived from vegetable food is of value to the body than protein derived from animal foods. The source of animal protein for growing children is milk. It must emphasized that skimmed milk is as rich in good protein as w milk, and butter-milk (lassi) of good quality is also a useful sourc

The following diagram represents an insufficient and ill-balanced diet which is probably typical diets consumed by millions in India.

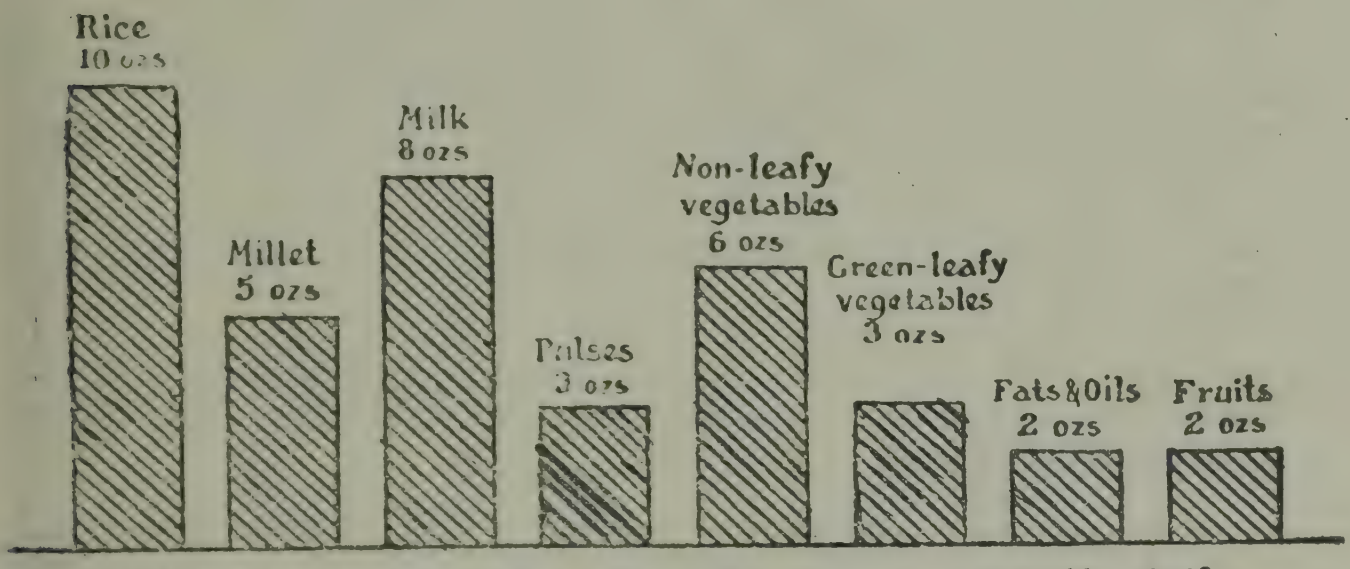


1750 calories, less than average adult daily requireme This diet is deficient in protein, fat, vitamins and mine salts.

By making certain alteration in the ill-balanced diet at a reasonable cost, it can be changed into a well-balanced diet, which is illustrated in the following diagram.

A well balanced diet based on rice and millet.

It costs twice as much as the ill-balanced diet and needs more land for its production. At present living standards, it is outside the reach of the average Indian Villager.



2600 calories, corresponding to average adult daily requirements. This diet contains adequate quantities of proteins, vitamins and mineral salts.

Fats.—Fats supply heat and energy to the body in a condensed form. There are two main sources of facts (1) Animal fats such as ghee, butter etc., (2) Vegetable fats such as vegetable ghee (Banspati ghee) cocoanut oil, groundnut oil, til oil and linsed oil. Animal fats are richer in vitamins than vegetable fats.

Carbohydrates.—Carbohydrates are the main source of heat to the body. Rice, wheat, millet, barley, ragi, maize, cambu and bajra contain a high proportion of carbohydrates. Sugar is wholly carbohydrates.

Mineral Salts.—Minerals are also important constituents of the body and must be supplied in adequate amounts by the diet. Calcium, phosphorus, iron, iodine. sodium, potassium and magnesium are the important ones. These are contained in milk, meat and vegetables.

Vitamins.—In addition to the above essentials of diet one's body cannot remain in normal health without vitamins. These are like giving substances which are classified as A.B C.D. and E. Butter, cream, unadultered ghee, whole milk, egg yolk, liver oils are rich in vitamins A.D. Yeast and grains of cereals contain vitamin B in abundance. Oranges and lemons contain an abundant supply of vitamin C and fresh green lettuce, wheat, oat, meat and butter are sources of supply of vitamin E.

The daily food requirements of an average man for scien purposes, are estimated in calories. A calory is a heat measure u to ascertain the energy value of food stuffs. Food equivalent to heat value of 2,600 calories per diem is required for an aver Indian. Persons performing manual labour require about 3, calories and those leading sedentary lives need about 2,200 calorie

In India, especially among the poor classes, the ordinary consists mainly of cereals, *e.g.*, rice, wheat, millet, maize or cam Supplementary food stuffs such as milk, green vegetables, eggs fruits are taken in very small quantities, if at all. Here is an exam of a typical ill-balanced and insufficient diet. Its energy value co to 1,750 calories only.

In north of India rice might with advantage be replaced wheat.

For non-vegetarians 3 ounces of flesh food may be added the above diet and quantities of pulses and vegetables may be c respondingly reduced.

It must be borne in mind that milk is a very important fo and is necessary for the development of young children. T quantity consumed daily should be at least 4 chhataks, prefera 8 chhataks. If parents cannot afford milk it can be replaced buttermilk (lassi).

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WHAT THE COUNSELLOR SHOULD KNOW ABOUT EARS, TONSILS AND ADENOIDS

1. Hearing is the faculty by means of which our minds m contact with the world about us through the medium of sou Good hearing is a most important factor in securing an educati

in qualifying for avocation and in enjoying life. The organs of hearing are the ears, the auditory canal the middle ear mechanism, the auditory nerves and the auditory centres in the brain.

2. Heredity may play an important part in defective hearing, particularly in cases of nerve deafness and cases of susceptibility to diseases affecting the middle ear.

3. Sound waves are normally transmitted through the auditory canal, to the "drum" which guards the middle ear. In this middle ear are small bones so connected as to carry the sound waves to the nerve terminals in the inner ear, and thence by the auditory nerve to the brain.

4. Defects in hearing may be caused by :—

(*a*) Obstruction of the auditory cannal by wax or foreign bodies or swellings.

(*b*) Diseases of the middle ear, which destroy the drum and the relationship of all the small bones.

(*c*) Interference with the auditory nerve.

5. Sound wave may reach the auditory nerve by being conveyed through the body structures of the skull, when the normal path is obstructed or destroyed. In these cases children often keep their mouths open "to hear better".

6. There is direct passage from the throat to the middle ear called the eustachian tube. This passage serves to equalize the air pressure on both sides of drum. It may become partially closed by inflammation or other obstruction, such as over developed adenoids. It is also a channel through which infections from diseases of the throat make their way into the middle ear, frequently causing an abscess. This abscess may burst outwardly through the drum, giving rise to a "running ear" ; or may spread inwardly, giving rise to a serious brain infection (meningitis).

In these cases, lancing of the drum early may minimize the damage to the drum, diminish the danger of other serious complications and thus lessen the degree of defective hearing that may follow. S mptoms of middle ear infection are pain, fever and sometimes vomiting. Such cases should be referred to a physician at once.

Children should be taught to blow the nose gently. Any obstruction in the nasal passages if the nose is blown too vigorously may force infection into the eustachian tube.

7. Infection of the outer ear canal may be caused by pickin the ear with the finger nail, hairpin or other instrument. Saf advice is to "pick your ear only with your elbow."

8. Most deafness is the result of ear infections starting in th first ten years of life. The diseases most commonly giving rise t these infections are measles, scarlet fever, tonsilitis and colds. Speci care should be taken in the care of such cases to prevent the infec tion spreading to the middle ear. It is estimated that at least 5 pe cent of school children are hard of hearing.

9. A child may be deaf in one ear only. This chil should be seated in the classroom with the good ear towards th teacher.

10. Some children hear certain sound waves better than othe waves.

Where there is any doubt, the child should have a specia examination.

11. Mental retardation is frequently due to defective hearing. There are three times as many "repeaters" among the hard of hearing as among normals.

12. Defective hearing may give rise to psychiatric problems such as behaviour changes, isolation from companions with resulting unhappiness, introversion or inferiority complex. Mistakes made by the hard of hearing should never be ridiculed by teacher or pupils.

13. The normal child hear the "whispered voice" with either ear at a distance of twenty feet, and should at least be able to hear the ordinary conversational voice, clearly, with either ear at the back of the room. All children should he tested by the teacher or the school nurse at least every two years. Cases of defective hearing should be dealt with as follows :—

(*a*) Recommended for medical examination.

(*b*) Placed in a front seat.

(*c*) Taught lip reading in severe cases. (In these cases the teacher should be careful to face the pupil and speak slowly when imparting important information or asking questions).

(*d*) May need some individual coaching in studies.

(*e*) Retested at intervals to determine progress of condition.

(*f*) Given vocational advice suitable to the handicap.

14. Discharging ears may heal up quickly if given prompt and efficient treatment ; otherwise the condition may become chronic. The chronic cases are apt to discharge after every fresh cold. The discharge frequency becomes very offensive. Such cases should be referred to the physician for special treatment.

15. The 'boxing' of ears is entirely out of date. It sometimes causes a ruptured ear drum.

Tonsils

1. The tonsils are two oval-shaped soft masses of glandular tissues, one on either side of the throat at the back of the tongue. They are marked by depressions which are the openings of crypts of pits. They are supposed to act as policemen in protecting the body against the invasion of disease germs.

2. They may become so enlarged as to obstruct swallowing or interfere with speech, in which case. even though not diseased they should be removed.

3. The crypts may collect food particles, which mixed with mucus, saliva and germs cause decomposition and may give a foul odour to the breath. If the crypts remain open, this decomposed debris is pressed into the mouth in small, whitish offensive particles. If the openings of the crypts become closed, this decomposing material sets up an inflammation, giving rise to one form of tonsilitis.

4. Inflammation of the tonsils may also be caused by such diseases as diphtheria, measles, colds, scarlet fever and other streptococcus infections. In these diseases the tonsils are red and swollen and frequently covered with white spots or membrane. In some attacks of tonsilitis an abscess forms behind the tonsil giving rise to the condition called quinsy.

5. Most forms of tonsilitis are readily communicated to others by direct or indirect contact.

Direct contact may occur through kissing, coughing or sneezing.

Indirect contact may occur through a milk supply, as in septic sore throat or scarlet fever, where those, handling the milk, may be affected. It may also occur through dishes, towels, pencils etc.

6. Germs or their poisons (toxins) entering through the tonsils may cause serious trouble in other parts of the body, such as the heart, chest, joints, muscles, kidneys, eyes, skin, stomach, gall-bladder, ears and nervous system. In some of these cases, the

urface of the tonsil may not show any great sign of disease, b careful examination will usually discover foci of infection de down in the tonsil tissue.

One-third of all cases of rheumatism start from diseased tons and rheumatism is the cause of 40 per cent of all heart disease hence the importance of early discovery and removal of diseas tonsils.

7. Tonsils are probably diseased and should be referred a physician when the following signs and symptoms appear :—

(*a*) Frequent attacks of sore throat with swollen tonsil glands. (These glands are found just below the ang of the jaw and can be felt and seen in the neck).

(*b*) Frequent colds.

(*c*) Frequent earache.

(*d*) Discharging ears.

(*e*) Rheumatic attacks.

(*f*) Growing pains.

(*g*) Chorea (St. Vitus' Dance).

(*h*) An attack of quinsy.

(*i*) Loss of weight, appetite and energy, where no othe cause is apparent.

(*j*) Anaemia.

8. *Chorea* (*St. Vitus' Dance*).—This condition is usuall attributed to a rheumatic tendency in the patient, and in such cas the tonsils. when at all suspicious, should be removed. Th condition usually develops very insidiously and often accurs in th brightest children. It should be suspected when the followin symptoms are noticed.

(*a*) Changes in disposition.

(*b*) Irritability.

(*c*) Muscle incoordination ;

shown in early stages by the dropping of penci spoons, dishes, etc., also by gradual deterioration handwriting. Shown in later stages by irregular jerk uncontrollable movements of various parts of th body.

(*d*) Emotional instability.

(*e*) Weakness, loss of weight, anaemia.

9. Tonsils may be removed at any time of the year, b

13567

unless, there is urgency, the following points should be considered :—

(*a*) Avoid the season of epidemics.

(*b*) Allow at least two or three weeks after an attack of tonsilitis or cold.

(*c*) Not advisable before $2\frac{1}{2}$ years of age unless for very special reasons.

10. The necessity for, and the time and method of removal, as well as the choice of anaesthetic are matters to be left to the judgment of the attending physicians.

Adenoids

1. Adenoids are bundles of glandular tissue similar to tonsils and are situated behind the nasal passages at the upper part of the throat.

2. Normally, like the tonsils, they act as filters in preventing disease germs, dust, etc. in breathed air, from entering farther into the body. They may interfere with health either by overgrowth or by becoming diseased as in the case of tonsils. Diseased tonsils and diseased adenoids are usually, though not always, associated.

3. When over-developed they may obstruct the nasal passages so that the patient becomes a mouth breather, or they may obstruct the opening into the eustachian tube, thus interfering with the air pressure in the middle ear and causing a defect in hearing. When diseased, they may spread the infection through the eustachian tube to the middle ear causing an abscess.

4. Obstruction to the nasal passages may result in snoring when the patient is sleeping, and may interfere with his sense of smell. It may also give "nasal" twang to the voice.

5. Diseased adenoids may be suspected and should by referred to the physician when the following signs or symptoms appear :—

(*a*) Chronic nasal discharge.

(*b*) Earache or running ears.

(*c*) Frequent colds or bronchitis.

(*d*) Droppings of mucus in the back of the throat.

(*e*) Difficulty in hearing.

(*f*) Mouth breathing.

6. When diseased and enlarged adenoids are not removed, many children so affected show a characteristic facial form and expression. This may be partially due to obstruction of the air passages, or in part due to an obsorption into the system of an

oversecretion of the adenoid tissue. These children are frequently dull in appearance and retarded mentally so that early removal of the adenoids in such cases is most important.

WHAT THE COUNSELLOR SHOULD KNOW ABOUT EYES

The eye is a miniature camera. The interior part, which appears as a watch crystal, is the cornea and permits light to pass through into the interior of the eye. The characteristic colour of the eye is given to it by the iris, which lies behind the cornea and which is a pigmented membrane with a hole in the centre called the pupil. The iris acts as an automatic diaphragm, contracting when the light is bright, so reducing the size of the pupil and preventing an excess of light falling on the retina and when the light is dim, relaxation of the iris results in expansion of the pupil so that more light may enter. Behind the pupil lies the lens which focuses light on the retina. The retina or nerve layer lines the interior of the eyeball and acts as the sensitive film, and conveys images through the optic nerve to the brain. This nerve layer is very delicate, and all the other structures of the eyeball serve either to nourish it, protect it or focus light on it.

How To Test Vision ?

As given in Appendix I.

Proper Lighting

Recent experiments have shown that the average school house and even modern dwellings have less than one-fourth of the amount of light necessary for eye comfort. Inadequate lighting results in eye strain and difficulty in reading. The light should come from over the left shoulder but should not be direct sunlight. If electric lights are used, a bulb of at least 60 watts is necessary and it should not be more than 5 feet from the book. A mantle type lamp is better than a coal oil lamp because its light is brighter and steadier.

Eye Defects

Defective vision may cause a child to be backward in his studies, and children who have been classed as "backward" are often that way because they are unable to see the blackboard, and rather than admit that fact they say that they do not know. The teacher should watch for defects in eyesight and suggest that the child obtain proper medical care. If the defect is great, the child should not be pressed in his studies. Myopia or short-sightedness tends to become worse if the eyes are over-worked.

A child may have normal vision when tested with the chart but still suffer from headaches, nausea or vomiting. These symptoms are

very often caused by slight defects in the curvature of the cornea, called astigmatism. It is important to have a proper eye examination, and the child should be sent to a medical doctor who specializes in eyes, *i.e.*, an oculist. The use of glasses in refractive errors usually cures the headaches, nausea, vomiting and also improves the general health.

Crossed Eyes or Strabimus

This condition may be evident at birth or at any time afterwards up to the age of 8 or 9 years ; it does not usually develop after that. It is easily recognised in children. If one eye looks at an object, the other eye will turn in or out. The eye which turns in soon beeomes partially blind through lack of use and if treatment is not started early, all that can be done in later years is to straighten the eye to improve the child's appearance. The eye may straighten without treatment at the age of 14 or 15 years but invariably it is almost blind.

A proper refraction with atropine must be done. Sixty per cent of the cases can be cured with glasses and they should be put on as soon as the child is old enough to understand. Some babies wear them at the age of 18 months, if they are fastened on with a harness. If glasses do not straighten the eyes, an operation may be done and if performed by a competent eye surgeon is not dangerous.

The psychological effect of crossed eyes is often overlooked. A child suffers the jeers of his playmates and may even develop an inferiority complex. The results of a properly performed operation are striking both in the appearance of the child and in his mental outlook. Treatment should never be delayed but should begin as soon as the conditions is recognised.

Pink Eye or Conjunctivities

This infection is quite contagious and care should be taken to prevent its spread by forbidding the patient to mingle with other children while the eyes are still red, and seeing that he has his own towel. In schools and orphanages where the old type roller towel was used, the disease spread rapidly. It is a condition in which the eyeball becomes extremely red and inflamed, hence the name "Pink Eye" the lids stick together and there is moderate yellowish discharge. The vision is not affected. The eyes should be bathed four times a day for 20 minutes in a hot solution of boracic acid, using one teaspoon of powder, to a pint of water ; one drop of 15 per cent argyrol may also be put in the eyes three times a day. If there is no improvement in three or four days, medical advice should be sought.

Eye Examination

It is important that teachers should know the difference between opticians, optometrists and oculists. An optician manufactures glasses. An optometrist tests eyes and sells glasses but is not a doctor and has not had medical training. An oculist is a medical doctor who has spent several years in post-graduate study devoted to the medical and surgical treatment of eye disorders.

WHAT THE COUNSELLOR SHOULD KNOW ABOUT DENTAL HYGIENE

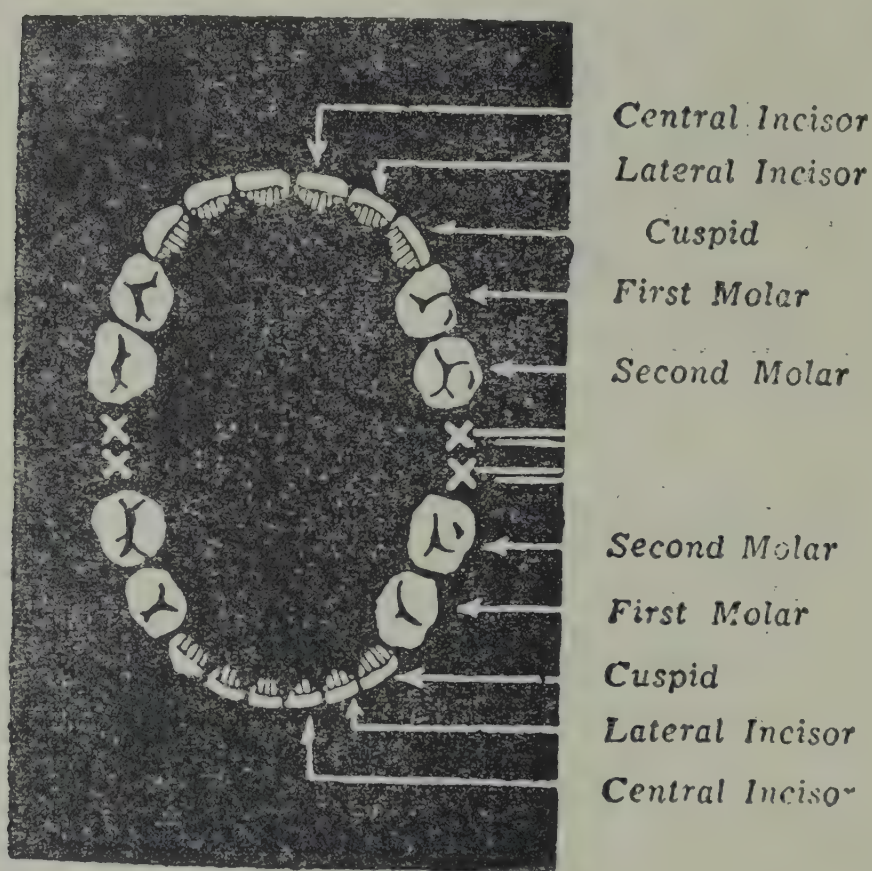

Diagram 1

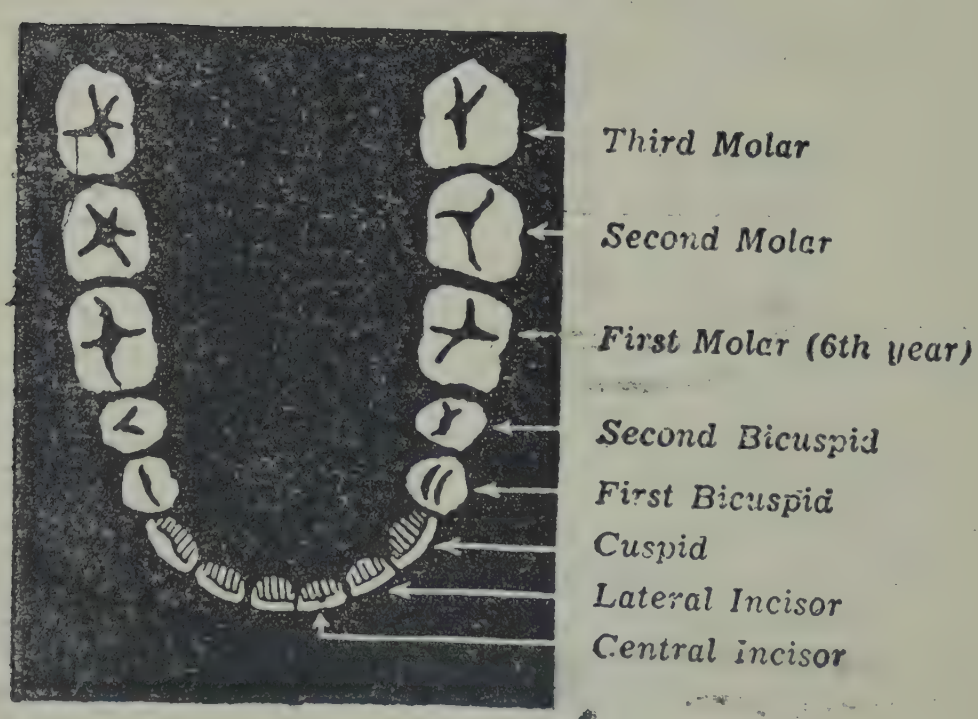

Diagram 2

1.—Deciduous Teeth

Diagram one represents the arrangement in the mouth of a full set of deciduous or "baby" teeth. These are called deciduous teeth because they are shed as a child grows and replaced one at a time, usually between the ages of 6 and 12, by the permanent teeth. The deciduous teeth. 20 in number, are normally all in place at two years of age. The incisors. needed very early in the child's life for cutting and grinding vegetable fibres and grains. usually appear in the first 10 months. The first molar comes at 12 months ; the canines at 18 months. and the second molar at two years of age, The molars are adapted to seizing, tearing and grinding the more solid foods that a child needs as he grows older. The deciduous teeth are exceedingly important to the child, and every care should be taken to preserve them until the time comes for them to be shed. The health of the child depends greatly upon this and besides the permanent teeth will suffer if the deciduous teeth are neglected.

2.—Permanent Teeth

Usually at six years of age the first four permanent teeth appear in the mouth, immediately behind the "baby" teeth in the position marked "X" in diagram 8, shown on page 28.

3.—The Structurl Of A Single Tooth

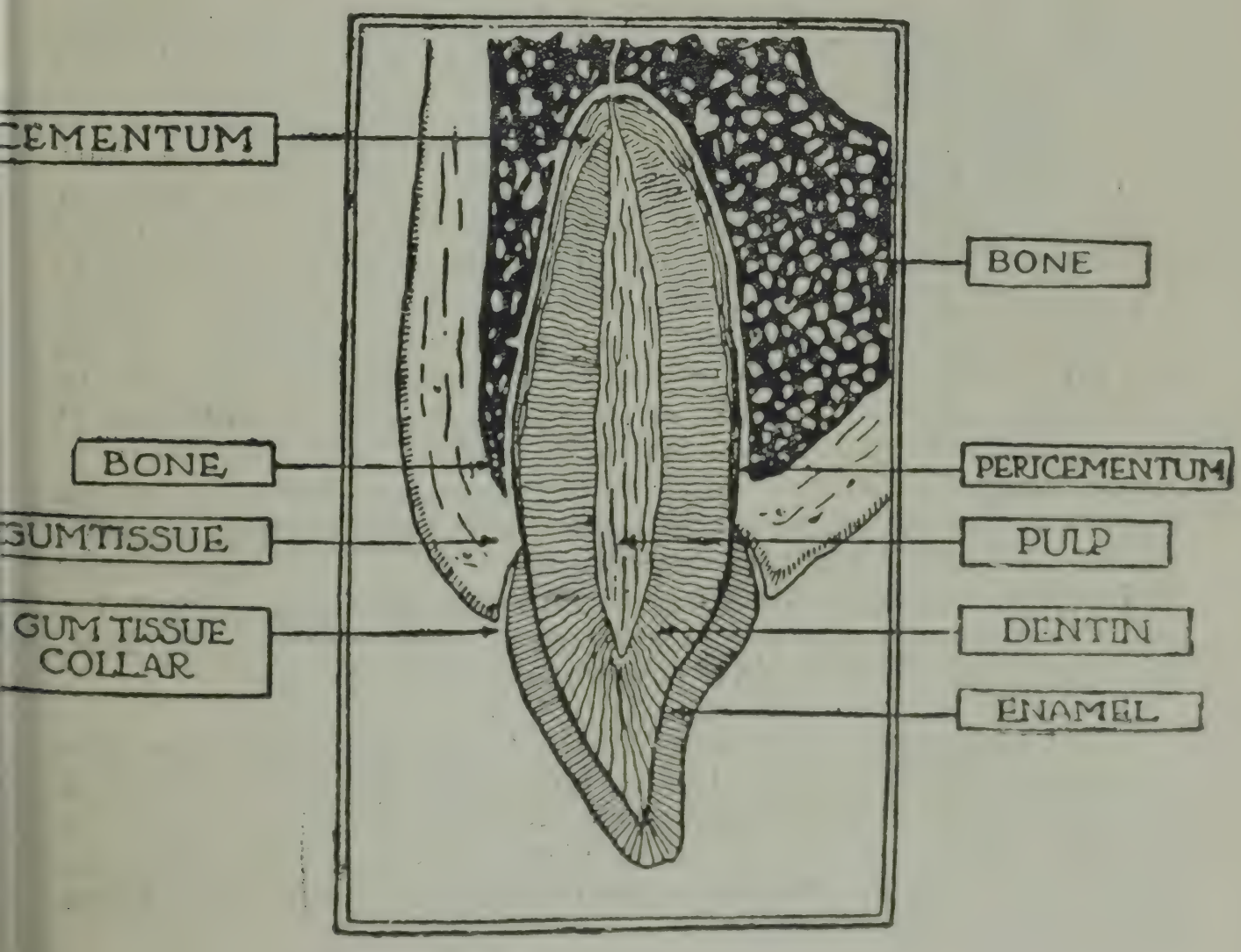

Diagram 3

These teeth are known as the sixth-year molars. Because of the fact that they appear so early and usually before any of the deciduous teeth are shed they are not recognised by many parents as being permanent teeth and are often allowed to decay with very serious results to the general health of the child and the future development of his teeth. The care of these sixth-year molars is of such importance that they are dealt with in a later paragraph of this outline.

Diagram 2 shows the arrangement in the mouth of a set of permanent teeth. There are 32 tecth in all, The diagram 2 shows one set of 26 permanent teeth.

For our consideration a tooth may be divided into the crown, the root, and the pulp. The crown is all that portion of the tooth seen in the mouth. The root is that portion buried in the bone. The main body of the tooth is made up of dentin, which is covered on its crown portion with enamel and on its root portion with cementum. The pulp occupies the central portion of the tooth.

(a) Enamel,—The enamel is made up of lime salts such as these in the dentin in bone, but it has in it practically no sensitive organic matter such as the little fibres in the dentin ; so the enamel is without feeling. It is affected by wear and chemical destruction. If the enamel is once broken and the dentin becomes decayed beneath it the enamel will chip off in large pieces ; but otherwise, well formed enamel, being the hardest substance in the body is very durable and will withstand the usual wear of mastication.

(b) Dentin.—The human tooth is made up, for the most part, of a substance called dentin. This is a springy, ivory like material, which is hollow in the centre to contain the pulp (incorrectly called the nerve). The dentin is covered on the outside by two substances ; (1) enamel (the hardest and most durable substance in the body). which covers the exposed part of the tooth, known as the crown, and (2) cementum. a thin bone-like layer covering the root of the tooth. The dentin is made up of lime, salts (such as are found in bone) that form the minute tubes through which run tiny fibres of sensitive organic matter. These fibres radiate from the pulp to the outside of the dentin, where the latter touches and is attached to the enamel and cementum. These little fibres keep the dentin moist and springy. If the dentin becomes uncovered by decay or wear the presence of these fibres make it sensitive to touch or to cold, heat, sugar and salt. The dentin is nourished through the pulp.

(c) Cementum.—The thin bone-like layer or cementum that covers the tooth root has no feeling, but it has nourishment. which the enamel lacks. The cementum can be repaired if injured. The cementum holds the fibres of the thin layer of gristle-like substance, which is similar to the periosteum covering the bones and is called the pericementum.

(d) Pulp.—The pulp occupies the central portion of the tooth and is made up of supporting tissues, nerves and blood vessels. It is large in the upper or crown portion of the tooth and tapers of towards the root and until it passes out from the tip of the root through one or more very fine openings and is connected with the blood vessels and nerves that surround the root.

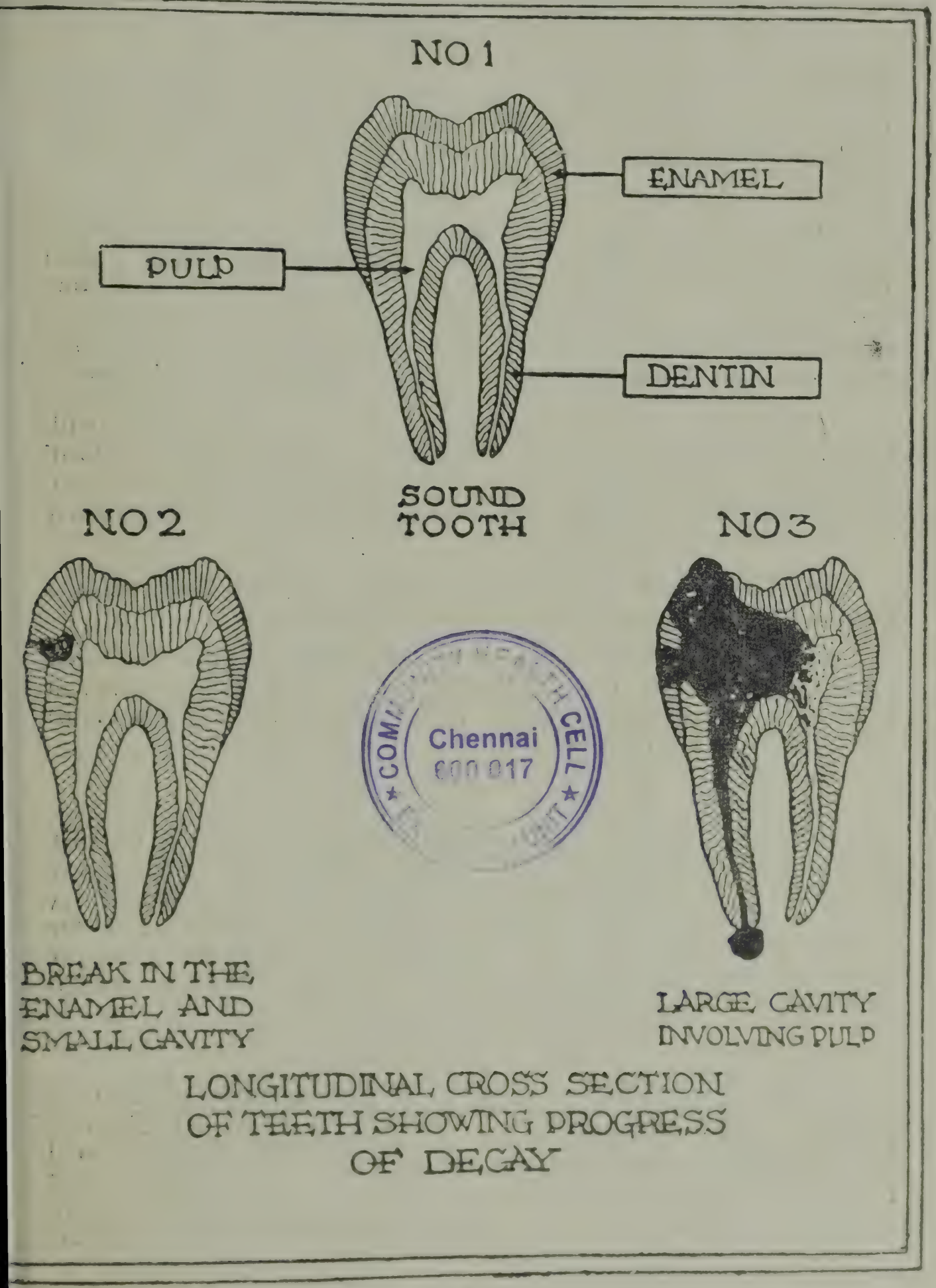

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Diagram 4

4.—The Importance Of Preserving The First or Deciduous Teeth

Parents often make the mistake of neglecting the first or deciduous teeth of a child, because they will fall out in any event and are, therefore, so they think. unimportant. No greater mistake, or one more fraught with serious consequences to the health of the child. can be made. These "baby" teeth should be preserved in good condition as long as nature intended them to be preserved, that is, until they are ready to be shed naturally.

(1) They are needed by the child for proper mastication of food. If they are sore or broken down, or extracted too soon, the child's masticating machine is inefficient and his bodily health suffers.

(2) They act as guides to the permanent teeth, first guiding into place the first (sixth-year) molar directly behind the second deciduous molar. Later permanent teeth come in place of each deciduous tooth. If one or more deciduous teeth are lost. due to decay, the permanent tooth comes into place out of proper alignment, making the permanent set irregular, unsightly and inefficient.

(3) The growth or development of the jaws is interfered with by the early loss of deciduous teeth. When a tooth is lost, the teeth in the back of the mouth tend to drift forward. There results an underdevelopment of the jaws, and disfigurement and irregularity of the permanent teeth.

(4) They are needed for correct speech. At the time when a child is learning to speak this is of great importance.

(5) It should be pointed out that attention of the deciduous teeth too long may impede the proper eruption of the permanent teeth, with serious consequences. If this condition occurs the dentist should be consulted,

5.—The Sixth-Year Molar

Mention has already been made of this tooth, but it is of such importance as to warrant attention in a special paragraph. There are four first permanent or sixth year molars, two in each jaw. They come in usually at the age of sixth-year. immediately behind the deciduous teeth and before any of the deciduous teeth are normally shed, and because they come in so early they are often mistaken for temporary teeth and not regarded seriously.

6.—How A Tooth Decays

It has been estimated that there are several billions of germs or bacteria in a neglected, unhealty mouth. In the warm, dark mouth these germs find an ideal place to develop very rapidly. Food collects in the spaces between the teeth in pits and fissures and at the gum margins, In this food the bacteria grow, producing an acid (lactic acid) which attacks the enamel of teeth, dissolving the

lime salts of which they are composed. The enamel are protective covering of the tooth being thus broken down or chipped off the bacteria and acid then reach the dentin, which is softer and much more easily destroyed. The enamel too, is further undermined, and a small cavity becomes a large one. Unless the cavity is cleaned and filled the infection ultimately reaches the pulp, which becomes infected and inflamed and finally dies an abscess being formed at the end of the root. Diagram 4 shows a tooth in various stages of decay. Tooth No. 1 is a sound tooth. In tooth No. 2 there has been a break in the enamel and the infection has reached the dentin. In No. 3 the infection in the dentin has greatly spread, chipping off more of the enamel and enlarging the cavity. The pulp also has been infected and in one root of the tooth it has been entirely destroyed. An abscess has been formed at the end of this root which is full of poisonous matter which will be carried by the circulatory system to all parts of the body.

Decay almost invariably starts in inter-proximal spaces, pits and groves where food debris is not easily reached by the tooth brush. For this reason frequent dental examinations are imperative.

7.—Preventive Measures

Much can be done by the mother and those interested in the baby or child.

(1) By preventing bad habits, such as thumb-sucking, mouth-breathing, etc., (a mouth-breather should have mouth, throat and nasal passages examined).

(2) By breaking these habits, if already formed, as soon as they are noted before much damage has been done.

(3) By making sure that the child has the right food, and that the food is coarse enough to require chewing ; work is needed for the correct development of the jaws. Food of a soft nature should be replaced by those requiring considerable mastication, thus providing exercise ; for it is only through exercise that muscles can transmit to the bones to which they are attached that stimulus that results in bone development. Since bone grows in virtue of the need for it, complete fascial growth cannot be expected in the absence of vigorous muscles of mastication.

8.—How We May Keep Our Teeth Healthy

(1) By keeping our bodies generally healthy. This requires :—

(a) Plenty of fresh air. Play outdoors as much as possible. Sleep with windows open. Be in the open air, as much as you can.

(b) Plenty of sunshine, not through a glass window, which keeps out the rays which especially minister to health, but in the open.

(c) Good food.—There are certain foods which contain the material necessary to build up the teeth. Teeth are made of lime salts. These are found in milk, in raw fruits such as oranges, apples, grapefruit, black-berries, cherries, figs. dates, apricots, peaches, grapes, gooseberries, in vegetables like celery, spinach, letuce. beets, tomatoes, pumpkins. peas and beans. Unless foods containing the proper tooth-building materials are eaten, the teeth will decay for lack of proper nourishment Eat hard foods which must be chewed. The chewing of hard coarse foods gives the proper cleaning to the surface of the teeth and helps to keep them polished, exercises the chewing muscles and massages and stimulates gums, keeping them pink, healthy and tough.

(d) Plenty of sleep.—In sleep our whole system is rested and repaired and without it we are tired and our health breaks down.

(e) Good habits of all kinds.—In fact, anything which is good for the body as a whole helps us to have sound and healthy teeth and mouths.

(2) By brushing the teeth when we get up in the morning, before we go to bed at night and after every meal so that the bristles remove particles of food stuck in between the teeth.

Note the following directions for brushing the teeth :

Select a medium-sized brush of fairly stiff bristles, arranged in tufts so that the bristles will pass in between the teeth.

First brush the grinding surface of all the teeth with a back and forth or rotary motion. Then brush the outer surface by placing the brush high up on the gums, the bristles pointing toward the root of the teeth. Now brush downward on the uppers, and upward on the lowers, pressing firmly and using a rotating or vibrating motion : this will force bristles between the teeth. Next brush the tongue side of the teeth in a similar way. Never brush cross-wise, this may wear grooves and cause gums to recede.

THE SCHOOL BUILDING AND COMPOUND

In planning construction of a school it should be borne in mind that it is meant for that part of the population which is particularly susceptible to environmental changes, hence it is imperative that the site, the building, and the general conditions of the school should be as nearly perfect as possible. On this account plans of new buildings should have the approval of both school doctors and teachers.

Chief points for careful examination in selecting a site are largely the same as those which are taken into consideration where a site for a residence is being chosen. They are :—

(1) *Accessibility.*—The site will be in such a position that it will be easily accessible from several directions.

(2) *Surroundings.*—Freedom of circulation of air and exposure to sunlight are two most important requirements which must be fulfilled. A school should be built on an open site well away from high buildings or any structure likely to cause stagnation of the air around the school premises. The building should be situated at least 60 ft. from a street and there should be no other building within 40 ft. (as a minimum) of the school. The site should be away from any factory, railway station etc., which would cause noise, smoke, smell or dust. It should also permit ample space for play and organised games.

(3) *Soil.*—The ground selected should be high, dry with natural drainage, so that water does not stagnate on the ground.

Consideration of the drainage of the subsoil water is important in the rural area. Made ground should, as a rule be avoided.

(4) *Aspect.*—The question of exposure to sun and direction of winds should be considered. All rooms as far as possible should be exposed to direct sunlight sometimes during the day. In India, where in most places prevailing winds are more or less east and west, such a building should be constructed with its length lying north and south.

Size of site.—A school building with plenty of ground and away from the main thoroughfare should be aimed at. The minimum area for elementary schools is a quarter of an acre for 200 children or 54 sq. ft. per head. For secondary schools the requirements are two acres per 190 children or sixteen times greater.

If the school is more than one storey the area can be proportionately reduced but space for playground should not be touched. Not more than one-fifth of the site should be covered by buildings.

Plans and construction of the buildings.—Great care should be taken in planning and construction of a school. In the short space available it is not possible fo deal with this subject in detail, hence only general indications are given below :—

Arrangement of the building depends on the number of children for whom provision is to be made, to the extent of land available, and whether the school is primary, middle or high.

For a large school there may be two main kinds of schools : one with a central hall and the other in which class rooms have direct through ventilation (Pavilion Plan).

Central hall plan.—The main feature in this is a central hall with class room around it Such a school is compact and does not extend over a great deal of land, a matter of importance in large cities where land is dear.

These schools have certain disadvantages from hygienic point of view. For example, the class rooms, excepting those at the corners have only one wall on the exterior of the building so that the space available for window is limited.

Pavilion Plan.—It is an attempt to remedy the defects of the central hall school. The hall teachers' room and the like, from one block, while the class rooms from another block, meeting the first at an angle. The class rooms are so arranged that eaeh has at least two walls opening to the exterior. This increases the amount of day light which can be admitted, and greatly facilitates efficient ventilation. There should be verandas on both sides of the class rooms, the inner one for convenience in reaching the class and the outer one to prevent the glare of the sun.

One storey building is better for tropics, and there should not be more than two storeys.

Class room structure.—The size should be such as to allow from 12 square feet of floor space for a child and 16 to 18 sq. ft. for bigger boys. The height of the room should be about 12 or 13 ft. Anything above that is of no use in regard to the ventilation of the room. Shape of the class room may be rectangular, the rows of desks being parallel with the shorter walls. The width of the room should preferably be not more than 20 ft. to 25 ft. or else some children will have difficulty in seeing the blackboard. Every part of the school room should be lighted. The light should come from the left or from above. Light from front will be dazzling to the eyes, and light from behind is not pleasant to the teacher, moreover, it causes a shadow of each scholar to fall on his work. The length of the room should be about 30 ft. otherwise the voice of the teacher may not be audible to all the students. If a room is 25 by 30 ft. it will give a floor space of 750 sq. ft. and allowing 12 ft. for height, the room will contain 9,000 cub. ft. of air. If about 16½ sq. ft. of floor spaces and 200 cub. ft. of air is allowed for each student, 45 students will be accommodated in the room. A class-room should not accommodate more than 50 nor less than 24 children. Window area should be about 1/5th floor area of the room. The lower sill of windows should be at least 4 feet from the floor so that the attention of the scholars may not be distracted by outside objects. These windows should be adequately protected from glare of the sun by the *'verandas'*, Besides the school should contain administrative

offices, teachers' room, common room etc., and a gymnasium. One room should be set apart for the work of the medical inspector.

Entrances.—The external doors should be in sufficient number to allow the school to be completely emptied in a few minutes. No school should have less than two entrances.

Construction.—The construction of school should be made with good materials in a substantial way. The nature of the materials will vary according to the locality and funds available. Expert advice should always be taken so that perfectly planned and thoroughly built school may be made. One storey building should stand on a plinth of at least one foot in height. The wall of the classroom should be such that it can be easily cleaned and the floor should be noiseless.

Playground.—It is essential for a school. A space of 30 to 50 sq. ft. per head should be the minimum. Funds permitting, it is a good plan to have part of the area covered for play in wet weather. The surface of the ground should not be hard as it may produce injuries and impose restrictions upon the nature of the games and exercises that are possible. The ground should be airy and sunny.

CLOSETS AND TOILETS

Sanitary conveniences should from an essential part in all schools. These should never form a part of the building and should be located at a distance from it. There should be provided 5 seats to a hundred scholars as a minimum. India has mostly rural conditions, under which public water carriage system is not feasible, hence we shall confine ourselves mostly to the type of closets that may be constructed under these conditions. A village school may have the following types of closets.

(1) *Earth closet.*—It depends upon the principle that when dry earth is mixed with faecal matter it becomes inoffensive and unrecognisable as such after a short time. This change is due to minute organism present in the soil. Loose loams, garden soil, dry clay, are good for this purpose. Sand, gravel, and chalk are unsuitable.

Construction.—A closet must be well-lighted, properly ventilated, and protected from rain. privacy must be maintained. Separate arrangement should be made for receiving urine and ablution water.

The component parts may be described under the following heads :—

(*a*) Superstructure, including the roof and the wall.

(*b*) The floor and the seat.

(*c*) The collecting chamber.

(*a*) *Roof.*—May either be sloping or terraced. Sloping roofs may be made of corrugated iron, tiles, or glass.

Walls.—May be either of brickwork, corrugated iron or bamboo matting. Suitable arrangements for ventilation must be made. The roof may have ample ridge ventilation or an opening of about 2 feet may be left between the wall and the roof.

(*b*) *Floor.*—Should be made of some impervious material such as brick work set in cement, stone, iron, etc., and should be sloped towards an opening or drain leading to a receptacle which will receive the ablution water and urine.

Foot rests.—Should not be too far apart, but should be put in such a position that the user may easily squat on it. The opening should be sloped from above downwards and outwards so that the chance of fouling the sides is minimised. The excreta should fall directly on the receptacle below.

(*c*) *Collecting chamber.*—This should also be made with impervious material and be capable of being easily washed. The floor should be 6″ above the ground level and made of concrete, with a slope leading to an opening. A trap door should be fitted for removing the receptacle.

Receptacle.—May be made of tarred ar galvanised iron and provided with a moveable lid. Splashing will be prevented if it is placed 6″ under the seat.

The method of use is to cover each stool at once with about a seer of earth which should be kept in a container by the side of the seat. This will remove smell and render the night soil inert. When the pail is full its contents may be buried into the ground.

This type of closet requires great attention and supervision to make it a success, If sufficient amount of earth is not put to completely cover the night soil, there will be great nuisance from fly breeding. A special sweeper should be kept to remove the soil, provide a fresh supply, and to keep a stock of dry soil during the rainy season. The supervision should be left in the hands of a member of staff who should visit the closet every day to see that the work is being properly done.

(2) *Pail Privy.*—The structure is the same as detailed above with this difference that no earth is added to the night soil. The contents should be removed every day and disposed of by trenching.

The receptacles should be thoroughly cleaned and disinfected after the night soil is removed otherwise great nuisance and danger

may arise from fly breeding. Special sweepers should also be kept for these types of privies and strict supervision is essential.

Donaldson system of seating may be used for this type of latrines. In this system solids are received into a pan from the seat above. After defecation, the user moves forward, urine and ablution water are carried away into a common drain connecting a row of seats. At the end of row, it is received into a receptacle into which it drains over a spout. There is a passage up the middle for the attendant and the seats are on each side of it.

(3) *Small septic tank.*—This type of closet is coming to the forefront in recent years. In this nightsoil drops into a water-tight compartment containing water and is acted upon by one group of organisms which liquefy the faecal matter. The effluent is then led underground by open jointed pipes and the soil bacteria further oxidise it to simple inorganic state. Septic tanks if properly constructed and intelligently used should give good results and are superior to the methods described above, because the disposal is not complicated and the nuisance and danger from fly breeding are minimum.

Construction.—Septic tank should be constructed about 100 feet away from any well and on ground which is not flooded during the rainy season. The tank must be water-tight. It may be made of bricks set in morter and cemented inside, concrete, or stones. The capacity of the tank should be about $2\frac{1}{2}$ cubic feet per user. The roof of the tank is at the level of the ground surface. The tank is divided into two compartments by vertical brick wall or baffle plate having communication below.

The seats are arranged over the tank, so that excreta falls into the chamber. From the second compartment a submerged outlet takes out the effluent which may be treated by disposal gallery. Open jointed earthen pipes of not less than 4 inches diameter are laid in a bed of broken stones or brick at a depth of 15 inches below ground and a gradient of not less than 2 inches per 100 feet. The length of gallery should not be less than 5 feet per user, when laid in porous sandy soil. In heavy soil the length should not be less than 10 feet per user. The gallery may be in one line or in parallel lines. This description is only a brief sketch. Persons desirous of further knowledge should consult special articles.

Five gallons of water per user per day should be provided. If possible flushing arrangements should be made, otherwise a bucketful of water should be thrown into the closet each time after use. This type of septic tank has worked well in schools having 500 scholars.

In working this type of tanks, it is very important to remember that the efficiency of the tank is limited in the sense that it cannot dispose of excreta of unlimited persons. It is therefore imperative that maximum number of users should always be fixed.

(4) If sufficient funds are available a complete installation of septic tank latrines on the lines advocated by Clemesha may be installed. The effluent, in this type of construction, is not treated underground but is led from the septic tank to aerobic filters where the aerobic bacteria complete the process of purification.

In every school separate wash-room should be provided for the scholars and they should be taught to wash their hands and face after exercise. Plenty of water should be available for this purpose and suitable receptacles and towels should be provided for. In towns which do not have public water supply, water may be stored in buckets and ordinary enamel basins may be used for washing purpose.

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VENTILATION IN THE SCHOOL BUILDING

Efficient ventilation and lighting of the class-room are of paramount importance. Pure air has an important bearing on the health and vitality of the scholars.

Effects of Impure Air.—Impure air means listlessness, inattention, headache, sluggishness, lack of energy and a disinclination to mental and physical exertion. Moreover, vitiated air lowers resistance to certain diseases. The air in the room becomes vitiated by respiration of the inmates, the personal emanations from the scholars, dust from the black board, ('kacha') roof : and floor or shoes. Polluted air may be the cause of spread of contagious and respiratory diseases, if not replaced frequently by pure air.

Results of incorrect lighting.—Incorrect lighting, on the other hand, causes eye strain, which often results in functional disorders, shortsightedness or other eye defects. This may be due either to insufficient illumination or to glare.

It is, therefore, necessary to have an adequate amount of daylight in all parts of classroom and to keep the air clean and fresh.

Exits for Foul Air,—Provision of outlets for impare air is of supreme importance. These are providsd high up in the room.

Louvred openings can be provided near the roof. They should slope from within outwards and upwards.

Clerestory windows also serve the same purpose.

In large schools exhaust fans worked by electricity may be installed in the upper corners of the room to remove the foul air rapidly.

Inlets for Fresh Air.—The inlet provisions should total 24 square inches per scholar and should be larger than the outlets provided. Louvred inlets at a height of one to three feet above the floor will be quite suitable.

Lighting and Schoolroom.—For satisfactory lighting and ventilation windows are provided. The window area, clear of frames, should be 1/5th the floor area of the room.

Position of Windows.--These should be the two side-walls only ; the doors may be in the end walls. As winds blow mostly from west to east, or vice-versa, it will be an advantage if the class-rooms are built with their sides facing east and west.

The lower sill of the windows should be 4 feet from the floor of the room so that the pupils may not be distracted by objects outside.

The windows should reach as near the ceiling as possible, for the higher the windows, the greater the intensity of the illumination, the more uniform its distribution, and the more complete the elimination of glare.

The intervals between the windows should be as small as possible and they should be so situated that thorough ventilation by unobstructed passage of wind is possible.

The windows should open directly into the external air.

Surroundings.—Play grounds can with advantage be located near the school building. In any case there ought to be an open space around the building. There should be no trees or houses, within 50 feet of a window.

Types of windows.—Windows opening outwards in two halves are the best. To prevent the ingress of birds the louvred openings and clerestory windows should be protected with wire gauze from the outside. Windows and ventilators should be kept open and clean.

Direction of Light.—Light should fall, on the work over the left shoulder. If all light comes only from the left there will be no

annoying cross-shadows. However, if windows are on either side of the room, they will facilitate ventilation by percolation of wind.

When reading or writing children must never face the light, whether natural or artificial. Light is to see by—not to be looked at.

Glare.—Glare from any source or cause must be avoided. Too great a brightness on working surfaces is as ruinous to the eyes as insufficient brightness. Excessive light produces glare. Desk tops, glossy blackboards, pictures, chart and maps hung about the class-room are glare-producing and should be properly adjusted with reference to the sources of light. Glare may be avoided by the proper diffusion of light and the prevention of sharp contrasts, such as a brilliant light against a dark background. Blackboards should never be placed next to or between windows.

The windows should be adequately protected from the glare of the sun by verandahs or window shades. Translucent buff-coloured shades will transmit a considerable percentage of light and at the same time diffuse it. Sharp rays of light penetrating through holes in the roof or torn or cracked shades give excessive light and glare.

Colours.—Colours that are most satisfactory for good lighting conditions in class-rooms are greyish, green, light warm grey, light buff and dark cream for walls, and light cream or white for ceilings.

Illumination.—There should be uniform light distribution, all parts of the class-room being equally well-lighted.

A person with average vision should be able to read small pica, with ease and comfort, at a distance of one foot from the eye.

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RECREATIONAL ACTIVITIES—GAMES AND HOBBIES

Recreational activities may be classed under two main groups. These are : (1) Play and (2) Hobbies. Some of the activities which are here classed under play, may according to some, come under hobbies, or vice-versa. The idea of this attempted classification is merely to help us to direct our thinking along comprehensive channels, and not to raise any controversies.

Play

Under this head come games and athletics of a vigorous nature as well as the more quiet games played indoors or during social occasions. It may be further subdivided into : (a) Games and Athletics, (b) Rhythmic Activities, (c) Dramatic Activities.

(a) *Games and Athletics* are activities with which we are all familiar. Unfortunately teachers are often inclined to think that only such games as football, hockey, cricket or basketball alone constitute the games in school. These games need large areas to play, and often the equipment needed are costly. The tendency, therefore, in schools of limited means, is to completely neglect all game activities. Teachers in such schools, or even in well-to-do schools, may have witnessed how, very often, the boys and girls organise and play their own games. They can adjust themselves to conditions which are available. If children can do this themselves it can be done much more efficiently and usefully by teachers who can plan many games in small areas and with little equipment. In the rural schools where finances are restricted, and in city schools where schools are situated in conjested areas, the lack of facilities either in play equipment or play areas—ought not to eliminate games and athletics from the school life. There is no doubt that games like hockey and cricket have such traditions behind them which make them popular. Where facilities are available such games must be given every encouragement. Otherwise the leader must introduce plays which, even though they may have to be played with limited facilities, may yet be a source of fun and enjoyment for the participants. Many books describing such games are now available. It is not the explaining of the game correctly which makes it enjoyable. The leader must teach the various fundamental movements which will

make the players more efficient. The better one knows the skills of a game greater the satisfaction in playing that game. The teacher can, moreover, create interest and enthusiasm through his participation along with the children. A good play leader often joins the children in their games.

The leader must also remember that the children's interests and capacities in physical activities vary at various age levels. Young boys and girls must not be made to play strenuous games for long periods. They get easily tired physically. They also often lose their interests in a game when played for a long time. Team work is not appreciated till a boy or girl reaches adolescence. Stunts of daring, and games which can exhibit individual skills are more appealing to the child of 10 to 13 years. Examples of such traits are pointed out to emphasize to the play leaders that a wise choice of games is essential to make them popular. The custom of giving the same game, irrespective of the age groups fails to arouse the enthusiasm of pupils of varying age. Even such games as football and hockey are best enjoyed by younger folks when suitable modifications are made in the dimensions of the field, size of the ball, and the length of the game.

In addition to the vigorous outdoor games it is desirable to teach some quiet social games which may be played indoors. Such games will prove a source of great satisfaction when outdoor play is not possible. They are also valuable to promote social contacts which we need so much in this country. Indoor games can however never be a substitute for outdoor activities.

(b) Rhythmic Activities.—We all like rhythm. Expression of rhythm through physical activities gives us a sense of joy and exhilaration. Folk dancing is an example of how the people in the past have expressed themselves in wonderful rhythms. These dances. though old, are still so expressive of the inner traits and emotions of our people. Every part of our country is rich in folk dances, some difficult some quite easy. Opportunities, for our growing youths, especially our girls, ought to be provided to learn some of these dances. It may not be possible for a school teacher to attempt these. But with a little search it will not be difficult to get the help of somebody in the locality who knows some dances. Often these people can be persuaded to help voluntarily. Even if some remuneration is to be paid a part-time instructor can be arranged.

Marching to rhythm, skipping, hopping and clapping to rhythm, are also activities which can be used among the young to teach the sense of rhythm.

Music, both vocal and instrumental, whether done individually or in groups is another example of how we express ourselves rhythmically. Music can be successfully included as a part of the recreative programme in a club or school. We need to learn some music

not only to sing ourselves but also to enable us to appreciate good music.

(c) *Dramatic Activities.*--These also may be included along with play. This urge to dramatise, however, is greater among the young people. A recreation leader can include this as a part of his programme. Dramatisation may be merely imitating something or someone or enacting the farces and even important plays. Much experience and a real talent are required to attempt a big production; but we all can, with a little imagination, work up some simple stories and teach the pupils to act them. The children get a great deal of pleasure in this and perhaps, we will be able to awaken the seed of acting ability which may be lying dormant in some of our young people.

HOBBIES

Life is not lived at the highest if we spend all our time anxiously trying to fulfil our daily tasks. We must have certain periods when we can relax and engage in activities different from the routine. One of the most entertaining ways of doing this is through the pursuit of a hobby. Hobbies help to give that change which the human organism needs to revive itself for more complete application in the serious tasks of life. They are best developed while young.

Hobbies may be classified under three main heads :

(a) Constructional Activities, (b) Collections, and (c) Study of our Environment.

(a) *Constructional Activities.*—The child who builds with the blocks and the young boy or girl making mud pies are both expressing the desire to make something. This great urge to construct is very poorly satisfied in our educational institutions. A Counsellor can help to meet this by organising suitable handicrafts. Wood work, clay modelling, basket making etc., may be successfully promoted.

(b) *Collections.*—This is another hobby which can absorb the keen interest of most people. Collecting becomes on engrossing attraction when we develop an interest in collecting some one kind of thing. Then the attempts to get these, and arrange these, and study these, are all joys of such a peculiar type. The Counsellor who may promote collections must direct arranging the collections in proper order. A knowledge of the specimens collected, adds interest and such studies have great educational values. Collecting stamps of various countries, for example, may be made an opportunity to point interesting details about those countries.

(c) *Study of Environment.*—This too can be developed into a most pleasing hobby. Study of the stars. observing and studying the birds and their habits, making surveys of surroundings and drawing

maps, etc. are interesting pastimes provided the leader has a knowledge of these.

A good leader ought to organise exhibitions of hobbies because they help to create added interest among the pupils. Children as well as the adults, like recognition. To receive a prize, or to get a favourable comment are great incentives when they come from people whom we respect.

A List of Recreational Activities

Archery
Badminton
Boxing
Cricket
Drills
Folk dancing
Football
Gymnastics
Hockey
Handball
Indian games—Kabaddi or Chedugudu, kho-kho, etc.
Netball
Playground ball.
Pyramid building.
Rounders.
Small area games of various types.
Tennis.
Table tennis.
Track and field sports.
Tumbling.
Wrestling.
Volleyball.
Camping, hiking or going for long walks, picnicking.
Collecting stamps, stones, pictures, coins, insects, butterflies, birds, eggs and sets, feathers, leaves, flowers, etc.
Music—vocal and instrumental
Dramatics.
Carpentry.
Paper cutting.
Painting.
Clay modelling.
Needle work.
Gardening.
Study of the stars.
Photography.
Plant studies.
Keeping pets.
Poultry farming
Bee raising.
Gardening.
Story telling.
Debating.
Public speaking.
Newspaper reading.
Book clubs.
Organising exhibitions, Pageants, etc.

A List of Reference Books for Leader

1. *The Theory of Play.* Mitchel, E.D., and Mason, B.S.; A. S. Barnes and Company, New York.

2. *The Normal Course in Play.* Prepared by the Recreation Association of America, A. S. Barnes and Company, New York.

3. *Camping Out.* Prepared by the Recreation Association of America, Macmillan and Company, New York.

4. *Recreation for Girls and Women.* Bowers, E. A. S. Barnes and Company, New York.

5. *Games for Recreation.* Mason, B.S., and Mitchell, E.D., A.S. Barnes and Company, New York.

6. *Social Games for Recreation.* Mason, B.S., and Mitchell, E.D., A.S. Barnes and Company, New York.

7. *Games* for the *Playground, Home, School and Gymnasium,* Bamcroft, J. H., Macmillian and Company, New York.

8. *Rules for Games and Sports,* H. S. Buck, Y. M. C. A. Publishing House, Calcutta.

Journal on Recreation—"*Recreation.*" Published monthly at 315 Fourth Avenue, New York.

APPENDIX I

Report on the School Medical Inspection

Date	Class	Name	Age		Height		Weight		Chest		Vision Eyes		Ears		General development	Deformity if any	Remarks
			Years	Months	Ft.	In.	St.	Lb.	Minimum	Maximum	Left	Right	Left	Right			

INSTRUCTIONS

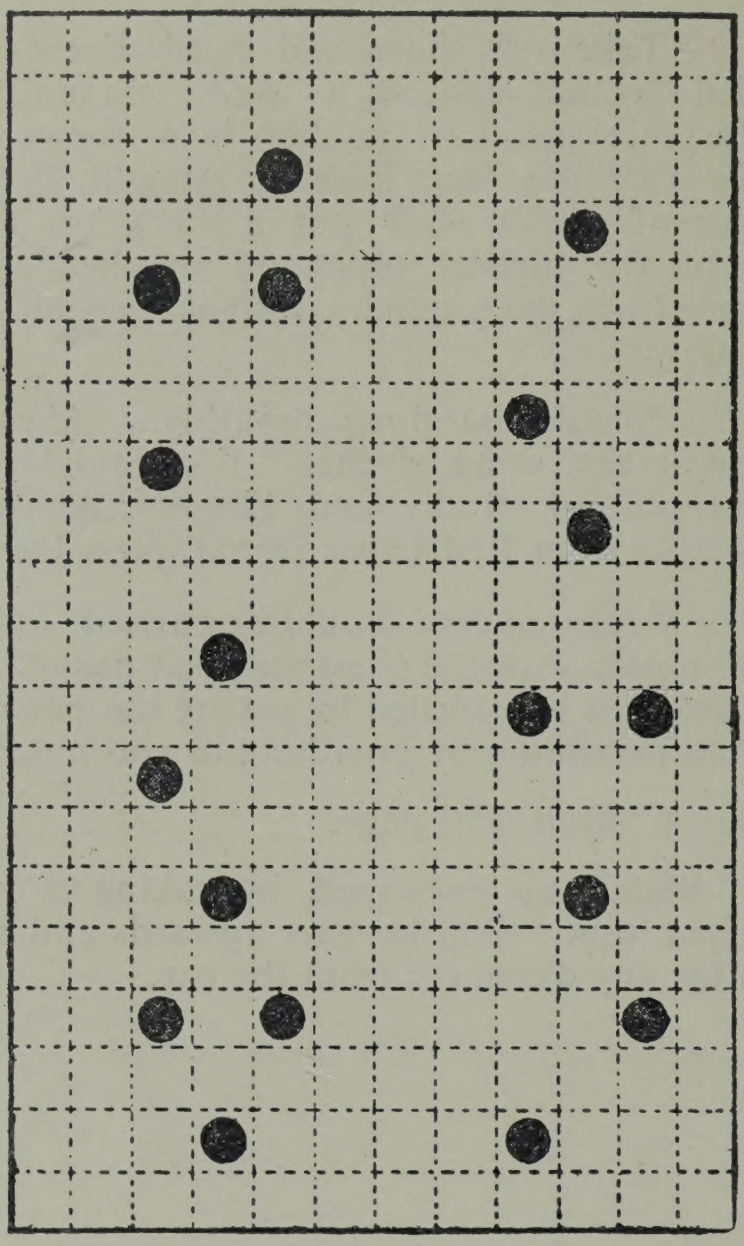
1. *Height*—Take off shoes and head dress. Stand on a levelled ground against a wall. Stand upright in a comfortable position, neither lean forwards nor backwards with the face looking straight in front. With a piece of a flat stick put a mark on the wall at the level of the highest point on the head. Measure the distance from the ground. Height should be taken every six months.

2. *Weight*—Should be done monthly. Always weigh the person in the same clothes. For Standard height and weight look up "Individual Height and Weight Chart" obtainable from Red Cross Depot, New Delhi.

3. *Chest*—Measurements should be carried out at the level of the nipple with the chest stripped naked. The minimum measurement is recorded by asking the person to breathe out and maximum by breathing in and holding the breath.

4. *Vision*—Consult next page.

5. *Ears*—Should be examined by taking a person out in sufficient light. Pull his ears upwards and backwards and peep for any discharge from the ear.



Directions for using The Test Dot Card"

1. Place the person with his back to the light and hold the test card perfectly upright in front of him at a measured distance of exactly ten feet. The light should fall fully on the card.

2. Examine each eye separately. The eye not under trial should be shaded by putting a piece of card board on the eye.

3. Expose some of the dots not more than 7 or 8 at a time and ask the person to name their number and positions, vary the group frequently to provide against deception.

4. The test card must be kept perfectly clean.

SOCHARA
Community Health
Library and Information Centre (CLIC)
Community Health Cell - Extension Unit Chennai
No.31, Prakasam Street, T. Nagar,
Chennai - 600 017
Tel : 044 45502438
email : clic@sochara.org
www.sochara.org

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